IN THE CLAIMS

1. (currently amended) A method of analyzing a set of values, comprising:

(a) defining a plurality of subsets of contiguous values within ~~the~~ a set of values comprising residual values that represent a difference between data element values of a predicted model data set and data element values of a measured data set;

(b) determining a measure of variation among contiguous values in each of the plurality of subsets to produce a plurality of measures of variation corresponding to the plurality of subsets; and

(c) categorizing the set of values based upon an analysis of the plurality of measures of variation.

2. (canceled)

3. (currently amended) The method of claim 1 ~~2~~, wherein the set of ~~measurement~~ values are values measured from a communication signal.

4. (currently amended) The method of claim 1 ~~2~~, wherein the set of ~~measurement~~ values are values measured from one of an observed substance and an observed event.

5. (canceled)

6. (currently amended) The method of claim 1 ~~5~~, wherein the residual values are the result of numerical analysis of a communication signal.

7. (currently amended) The method of claim 1 ~~5~~, wherein the residual values are the result of numerical analysis of values associated with one of an observed substance and an observed event.

8. (previously amended) The method of claim 1, wherein (c) comprises characterizing the set of values as one of homoscedastic and heteroscedastic.

9. (previously amended) The method of claim 1, wherein (a) further comprises:

(a.1) defining a range of values not greater than a number of values within the set of values; and

(a.2) defining a subset of values by positioning the range at a specific position within the set of values.

10. (original) The method of claim 9, wherein (a) further includes:

(a.3) varying the size of the range for a plurality of the subsets.

11. (original) The method of claim 9, wherein (a) further includes:

(a.3) varying the position of the range within the set of values for a plurality of the subsets.

12. (original) The method of claim 9, wherein (a) further includes:

(a.3) varying the size of the range for a plurality of the subsets; and

(a.4) varying the position of the range within the set of values for a plurality of the subsets.

13. (previously amended) The method of claim 1, wherein (b) further comprises:

(b.1) storing the determined measure of variation.

14. (previously amended) The method of claim 13, wherein (b.1) further comprises:

(b.1.1) storing a determined measure of variation in association with a size of the range and a position of the range associated with the subset for which the measure of variation was determined.

15. (previously amended) The method of claim 1, wherein (c) further comprises:

(c.1) categorizing the set of values based upon a difference between a measure of variation determined for one of the plurality of subsets and a measure of variation determined for another one of the plurality of subsets.

16. (original) The method of claim 1, wherein (c) further comprises:

(c.1) categorizing the set of values based upon n-way principal component analysis of the measures of variation determined for the plurality of subsets.

17. (previously amended) The method of claim 1, wherein (c) further comprises:

(c.1) categorizing the set of values based upon visual analysis of a plot of the measures of variation determined for the plurality of subsets.

18. (original) The method of claim 17, wherein the visual analysis is based upon patterns within one of a two-dimensional plot and a three-dimensional plot of the measures of variation determined for the plurality of subsets.

19. (original) The method of claim 17, wherein a position of a measure of variation within the plot is based upon a size of the subset and a position of the subset for which the measure of variation was determined.

20. (currently amended) An apparatus for analyzing a set of values, comprising:

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(a) a measurement module that produces a set of values comprising residual values that represent a difference between data element values of a predicted model data set and data element values of a measured data set;

~~(a)~~ (b) a windowing module that defines a plurality of subsets of contiguous values within the set of values;

~~(b)~~ (c) an analysis module that determines a measure of variation among contiguous values in each of the plurality of subsets to produce a plurality of measures of variation corresponding to the plurality of subsets; and

~~(e)~~ (d) an assessment module that categorizes the set of values based upon an analysis of the plurality of measures of variation.

21. (canceled)

22. (currently amended)   The apparatus of claim 20 ~~21~~, wherein the measurement module produces the measurement values measured from a communication signal.

23. (currently amended)   The apparatus of claim 20 ~~21~~, wherein the measurement module produces the measurement values measured from one of an observed substance and an observed event.

24. (canceled)

25. (currently amended) The apparatus of claim ~~24~~ 20, wherein the measurement module produces the residual values as a result of numerical analysis of a communication signal.

26. (currently amended) The apparatus of claim ~~24~~ <u>20</u>, wherein the measurement module produces the residual values as a result of numerical analysis of values associated with one of an observed substance and an observed event.

27. (original) The apparatus of claim 20, wherein the assessment module characterizes the set of values as one of homoscedastic and heteroscedastic.

28. (previously amended) The apparatus of claim 20, wherein the windowing module defines a range of values not greater than a number of values within the set of values.

29. (previously amended) The apparatus of claim 20, wherein the windowing module defines a subset of values by positioning the range at a specific position within the set of values.

30. (original) The apparatus of claim 28, wherein the windowing module further varies the size of the range for a plurality of the subsets.

31. (original) The apparatus of claim 29, wherein the windowing module varies the position of the range within the set of values for a plurality of the subsets.

32. (previously amended) The apparatus of claim 20, wherein the analysis module stores the determined measure of variation.

33. (original) The apparatus of claim 32, wherein the analysis module stores a determined measure of variation in association with the size of the range and the position of the range associated with the subset for which the measure of variation was determined.

34. (original) The apparatus of claim 20, wherein the assessment module categorizes the set of values based upon a difference between a measure of variation determined for one of the plurality of subsets and a measure of variation determined for another one of the plurality of subsets.

35. (original) The apparatus of claim 20, wherein the assessment module categorizes the set of values based upon n-way principal component analysis of the measures of variation determined for the plurality of subsets.

36. (original) The apparatus of claim 20, wherein the assessment module categorizes the set of values based upon visual analysis of a plot of the measures of variation determined for the plurality of subsets.

37. (original) The apparatus of claim 36, wherein the visual analysis is based upon patterns within one of a two-dimensional plot and a three-dimensional plot of the measures of variation determined for the plurality of subsets.

38. (original) The apparatus of claim 36, wherein a position of a measure of variation within the plot is based upon a size of the subset and a position of the subset for which the measure of variation was determined.

39. (currently amended)   A program product apparatus having a computer readable medium with computer program logic recorded thereon for analyzing a set of values, said program product apparatus comprising:

(a) a measurement module that produces a set of values comprising residual values that represent a difference between data element values of a predicted model data set and data element values of a measured data set;

~~(a)~~ (b) a windowing module that defines a plurality of subsets of contiguous values within the set of values;

~~(b)~~ (c) an analysis module that determines a measure of variation among contiguous values in each of the plurality of subsets to produce a plurality of measures of variation corresponding to the plurality of subsets; and

~~(c)~~ (d) an assessment module that categorizes the set of values based upon an analysis of the plurality of measures of variation.

40. (canceled)

41. (canceled)

42. (original)   The program product apparatus of claim 39, wherein the assessment module characterizes the set of values as one of homoscedastic and heteroscedastic.

43. (original)   The program product apparatus of claim 39, wherein the assessment module categorizes the set of values based upon a difference between a measure of variation determined for one of the plurality of subsets and a measure of variation determined for another one of the plurality of subsets.

44. (original) The program product apparatus of claim 39, wherein the assessment module categorizes the set of values based upon n-way principal component analysis of the measures of variation determined for the plurality of subsets.

45. (original) The program product apparatus of claim 39, wherein the assessment module categorizes the set of values based upon visual analysis of a plot of the measures of variation determined for the plurality of subsets.

46. (currently amended) An apparatus for analyzing a set of values, comprising:

(a) means for producing a set of values comprising residual values that represent a difference between data element values of a predicted model data set and data element values of a measured data set;

(a) (b) means for defining a plurality of subsets of contiguous values within the set of values;

(b) (c) means for determining a measure of variation among contiguous values in for each of the plurality of subsets to produce a plurality of measures of variation corresponding to the plurality of subsets; and

(c) (d) means for categorizing the set of values based upon an analysis of the plurality of measures of variation.

47. (canceled)

48. (canceled)

49. (currently amended) The apparatus of claim 46, wherein said (c) means for categorizing (a) characterizes the set of values as one of homoscedastic and heteroscedastic.

50. (currently amended) The apparatus of claim 46, wherein said (c) means ~~(e)~~ for categorizing further comprises:

(c.1) means for categorizing the set of values based upon a difference between a measure of variation determined for one of the plurality of subsets and a measure of variation determined for another one of the plurality of subsets.